

(No Model.)

J. P. SHADDICK.
VALVE PROTECTOR.

No. 466,838.

Patented Jan. 12, 1892.

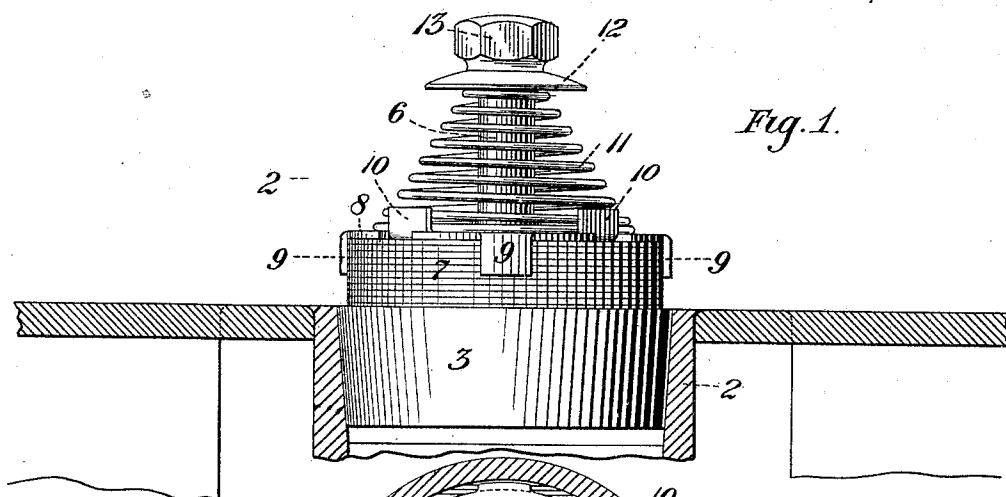


Fig. 1.

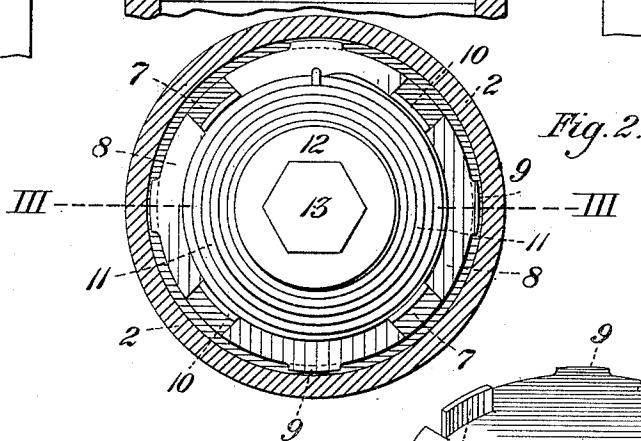


Fig. 2.

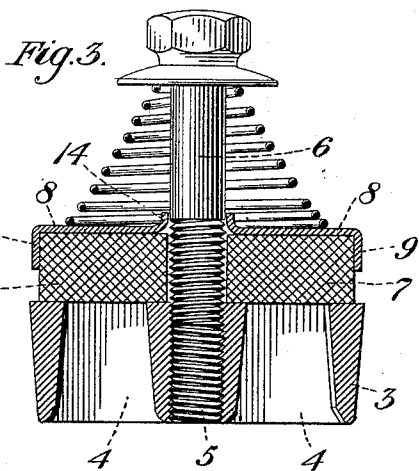


Fig. 3.

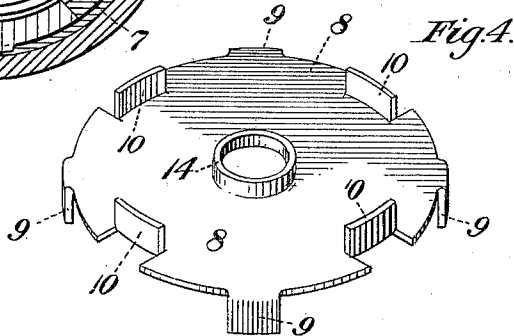


Fig. 4.

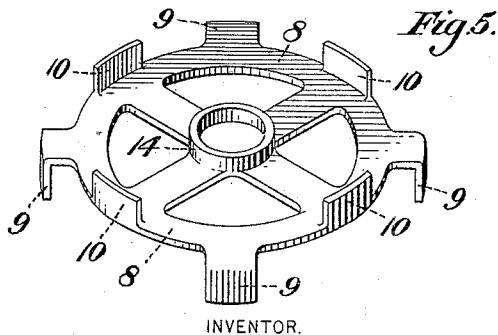


Fig. 5.

WITNESSES
N. M. Brown
N. B. Conner

INVENTOR.
John P. Shaddick
by his Attorneys
W. Bakerwell & Sons

UNITED STATES PATENT OFFICE.

JOHN P. SHADDICK, OF DENVER, COLORADO, ASSIGNOR OF ONE-THIRD TO
ROBERT HAMILTON BLACK, OF BRADDOCK, PENNSYLVANIA.

VALVE-PROTECTOR.

SPECIFICATION forming part of Letters Patent No. 466,838, dated January 12, 1892.

Application filed July 20, 1891. Serial No. 400,047. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. SHADDICK, of Denver, in the county of Arapahoe and State of Colorado, have invented a new and useful
5 Improvement in Valve-Protectors, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

10 Figure 1 is a side view of a valve provided with my improved protector. Fig. 2 is a top plan view of Fig. 1. Fig. 3 is a sectional view on the line III III of Fig. 2. Figs. 4 and 5 are perspective views of two different forms
15 of my protector.

My invention relates to that class of valves in which a perforated rubber disk rises and falls upon a central stem against the action of a spiral spring; and it consists in a protector for preventing the wear of the spring
20 and stem upon such disk. This protector also serves to hold the spring in proper position upon the disk, so that a uniform bearing is maintained thereon and uneven wear of
25 the same prevented.

In the drawings, 2 is the pump-casing, provided upon its interior with an annular conical surface, within which the valve-seat 3 is forcibly driven, thus securely wedging it in
30 place. This valve-seat is provided with the usual perforations 4, leading therethrough, and with a central screw-threaded hole 5, in which the correspondingly-screw-threaded stem 6 of the valve is secured. Upon the
35 valve-seat rests the rubber disk 7, having a central perforation through which the stem 6 passes, and upon the disk lies the protector 8. This protector consists of a centrally-perforated plate of metal having lugs 9, extending
40 downwardly therefrom to inclose the disk 7, and upwardly-extending lugs 10 to surround the lower spirals of a spring 11, which presses upon the protector, being held to its work by the collar 12, which surrounds the valve-stem,
45 and is held in place by the nut 13. The central hole in the disk 7 is slightly larger than the valve-stem, and the disk is guided in its vertical movements by a central flange or boss

14 upon the plate 8, which therefore receives the wear consequent upon the rising and
50 falling of the valve. The plate 8 may consist of a solid piece, as shown in Fig. 4, or of a ring having connecting-arms, as shown in Fig. 5.

It will be understood that the lugs may be
55 of many forms and sizes to suit the particular valve upon which the protector is used, and may even take the form of a continuous annular flange, and that the boss also may extend from either the upper or lower surface
60 of the plate, or from both.

The advantages of my invention obviously lie in the protection afforded the various parts of the valve and the consequent longer
65 life of such valve.

When the valve is worn or injured upon its lower surface, it may be turned over and its unimpaired upper surface utilized.

I am aware that a valve-protector consisting of a disk having an upper and lower annular flange is not new. Such disks, however,
70 cannot be formed from a single sheet of metal, nor can the flanges be formed so as to hold the packing and spring with sufficient security. By the substitution of lugs which
75 are independent of each other and are capable of independent pressure on the packing, I am not only enabled to construct the disk of sheet metal so as to insure the necessary
80 lightness and strength, but I also obviate the insecurity incident to former devices.

What I claim is—

1. A valve-protector consisting of a perforated plate having lugs which are cut from the body of the plate and bent at an angle
85 thereto and are arranged to inclose the valve, substantially as and for the purposes described.

2. A valve-protector consisting of a circular plate having a central perforation, downwardly-extending lugs arranged to inclose
90 the valve, and upwardly-extending lugs arranged to surround a spiral spring, said lugs being cut from the body of the plate and bent outwardly therefrom, substantially as
95 and for the purposes described.

3. A valve-protector consisting of a circular
plate having a central perforated boss and
two circular series of lugs extending from its
upper and lower surfaces respectively, said
5 lugs being cut from the body of the plate and
bent at an angle thereto, substantially as and
for the purposes described.

In testimony whereof I have hereunto set
my hand this 13th day of July, A. D. 1891.

JOHN P. SHADDICK.

Witnesses:

L. E. SHERMAN,
S. S. HATFIELD.